AMENDMENT TO THE TITLE

Please replace "A System and Method for Data Encryption" with "System and Method For Data Encryption Involving Order Determination and Generation of Position and Control Codes"

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for encrypting an input data string comprising a plurality of bits of binary data, the method comprising:

determining an order in which 2^n different configurations of n bits are to be identified in a position code;

~~(a)~~ generating a control code associated with the determined order ~~in response to the input data string~~;

~~(b)~~ generating a position code indicating the position of 2^n different configurations of n bits in an input data string in accordance with the determined order ~~in response to the control code~~; and

~~(c)~~ combining the control code and the position code to form an encrypted data string~~;~~

~~wherein the control code indicates the order in which 2^n different combinations of n bits are identified in the position code and the position code indicates the position of 2^n different configurations of n bits with respect to the input data string~~.

2. (Currently Amended) The method of claim 1, wherein ~~step (a)~~ generating a control code comprises generating a control code in response to the control code index.

3. (Currently Amended) The method of claim 1, ~~step (a)~~ wherein determining an order comprises ~~generating a control code~~ selecting a ~~in response to~~ a predetermined order ~~control code~~.

4. (Cancelled)

5. (Currently Amended) The method of claim 1, further comprising dividing the input data string into a plurality of blocks of data~~, comprising a number of bits of data prior to step (a)~~.

6. (Currently Amended) The method of claim 5, wherein the number of bits within each of the plurality of blocks of data is individually determined in response to a random number generator.

7. (Currently Amended) The method of claim 5, wherein the number of bits within each of the plurality of blocks of data is individually determined in response to a mathematical formula.

8. (Currently Amended) The method of claim 5, further comprising generating a plurality of block codes associated with a plurality of blocks of data, each block code indicating the number of bits within the associated ~~each~~ block of data.

9. (Currently Amended) The method of claim ~~5~~ 8 , further comprising combining the each of the plurality of block codes with the control code and the position code for the associated block of data.

10. (Currently Amended) The method of claim ~~5~~ 1, wherein determining an order ~~further~~ comprises ~~comprising the steps of:analyzing one of said plurality of blocks of data by~~ determining an order based on the frequencies of the 2^n combinations of ~~said~~ the n bits of the input data string ~~to generate said control code;~~

~~analyzing said one of said plurality of blocks by determining whether a specific relationship exists between the combinations of said bits of data to predict whether said input data string can be compressed simultaneously as it is encrypted; and~~

~~identifying the position of the combination of said bits of data by determining whether each of the combinations of said bits of data matches successive groups of said bits of data~~.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16 (Cancelled)

17 (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Currently Amended) A method for encrypting an input data string comprising a plurality of bits of binary data, the method comprising:

~~(a)~~ using a software program code means embodied on a computer readable medium, ~~analyzing the input data string~~ determining an order in which 2^n different configurations of n bits are to be identified in a position code;

~~(b)~~ using a software program code means embodied on a computer readable medium, ~~generating a configuration control code in response to the analysis of step (a) and in response to the control code index~~ generating a control code associated with the determined order;

~~(c)~~ using a software program code means embodied on a computer readable medium, generating a position code ~~in response to the control code; identifying the position of each n bit configuration data string~~ indicating the position of 2^n different configurations of n bits in an input data string in accordance with the determined order; and

using a software program code means embodied on a computer readable medium, combining the control code and the position code to form an encrypted data string

~~Wherein the control code indicates the order in which 2^n different configurations of n bits are identified in the position code and the position code indicates the position of the 2^n different configurations of n bits with respect to the input data string~~.

22. (Currently Amended) The method of claim 21, further comprising using a software program code means embodied on a computer readable medium, arranging the input data string into a plurality of data blocks ~~prior to step (a)~~.

23. (Currently Amended) A computer usable medium storing a computer program for encrypting an input data string comprising a plurality of bits of binary data, the medium comprising:

computer readable code for determining an order in which 2^n different configurations of n bits are to be identified in a position code;

~~(a) computer readable code for analyzing the input data string;~~

~~(b)~~ computer readable code for generating a ~~configuration~~ control code associated with the determined order ~~in response to the analysis of step (a) and in response to the control code index~~;

~~(c)~~ computer readable code for generating a position code indicating the position of 2^n different configurations of n bits in an input data string in accordance with the determined order ~~in response to the control code~~; and

~~(d)~~ computer readable code for combining the control code and the position code to form an encrypted data string;

~~wherein the control code indicates the order in which 2^n different configurations of n bits are identified in the position code and the position code indicates the position of the 2^n different configurations of n bits with respect to the input data string~~.

24. (New) The computer usable medium of claim 23, wherein the computer readable code for generating a control code comprises computer readable code for generating a control code in response to the control code index.

25. (New) The computer usable medium of claim 23, wherein the computer readable code for determining an order comprises computer readable code for selecting a predetermined order.

26. (New) The computer usable medium of claim 23, further comprising computer readable code for dividing the input data string into a plurality of blocks of data.

27. (New) The computer usable medium of claim 26, wherein the computer readable code for dividing the input data string into a plurality of blocks of data comprises computer readable code for determining the individual number of bits within each of the plurality of blocks of data in response to a random number generator.

28. (New) The computer usable medium of claim 26, wherein the computer readable code for dividing the input data string into a plurality of blocks of data

comprises computer readable code for determining the individual number of bits within each of the plurality of blocks of data in response to a mathematical formula.

29. (New) The computer usable medium of claim 26, wherein the computer readable code for determining an order further comprises computer readable code for determining a first order associated with a first block of data and determining a second order associated with a second block of data wherein the first order is different than the second order.

30. (New) The computer usable medium of claim 26, further comprising computer readable code for generating a plurality of block codes associated with a plurality of blocks of data, each block code indicating the number of bits within the associated block of data.

31. (New) The computer usable medium of claim 30, further comprising computer readable code for combining the each of the plurality of block codes with the control code and the position code for the associated block of data.

32. (New) The computer usable medium of claim 23, wherein the computer readable code for determining an order comprises computer readable code for determining an order based on the frequencies of the 2^n combinations of the n bits of the input data string.

33. (New) The computer usable medium of claim 23, wherein the computer readable code for determining an order further comprises computer readable code for determining an order in which 2^n different configurations of n bits are to be identified in a position code based on an analysis of the input data string.

34. (New) The computer usable medium of claim 23, wherein the computer readable code for determining an order comprises computer readable code for generating an order via a random number generator.

35. (New) The computer usable medium of claim 23, wherein the computer readable code for determining an order comprises computer readable code for generating an order using a mathematical formula.

36. (New) The computer usable medium of claim 23, further comprising computer readable code for determining whether the input data string can be compressed simultaneously as it is encrypted.

37. (New) The computer usable medium of claim 23, further comprising:

computer readable code for dividing the input string into successive n bit sequences;

computer readable code for comparing each of the 2^n different configurations of n bits with each of the successive n bit sequences;

computer readable code for determining the frequency of each of the 2^n different configurations appearing in the input data string;

computer readable code for determining whether a specific relationship exists between values of the frequencies of each of the individual 2^n different configurations appearing in the input data string;

computer readable code for selecting a first position code routine associated with the determined order when the specific relationship exists, the first position code being operable to encrypt and compress the input data string; and

computer readable code for selecting a second position code routine associated with the determined order when the specific relationship does not exist, the second position code being operable to encrypt the input data string without any compression.

38. (New) The computer usable medium of claim 23, further comprising computer readable code for assigning a value of two to n.

39. (New) The computer usable medium of claim 38, further comprising:

computer readable code for dividing the input data string into successive n bit sequences;

computer readable code for comparing each of the 2^n different configuration of n bits with each of the successive n bit sequences of the input string;

computer readable code for determining a first number representative of the number of times the most frequently occurring 2^n configuration appears in the input string;

computer readable code for determining a second number representative of the number of times the second most frequently occurring 2^n configuration appears in the input string;

computer readable code for determining a third number representative of the number of times the third most frequently occurring 2^n configuration appears in the input string

computer readable code for determining a fourth number representative of the number of times the fourth most frequently occurring 2^n configuration appears in the input string;

computer readable code for selecting a first position code routine associated with the determined order when the first number is greater than the sum of the third number and the fourth number, the first position code routine being operable to encrypt and compress the input data string; and

computer readable code for selecting a second position code routine associated with the determined order when the first number is not greater than the sum of the third number and the fourth number, the second position code routine being operable to encrypt the input data string without any compression.

40. (New) The computer usable medium of claim 39, wherein the computer readable code for generating a control code associated with the determined order, further comprises:

computer readable code for generating a first control code associated with the determined order when the first position code routine is selected; and

computer readable code for generating a second control code associated with the determined order when the second position code routine is selected wherein the first control code is different than the second control code.

41. (New) The computer usable medium of claim 23, further comprising computer readable code for encrypting the encrypted data string.

42. (New) The computer usable medium of claim 41, wherein the computer readable code for encrypting the encrypted data string comprises:

computer readable code for providing an encryption key having a first selected number of bits;

computer readable code for dividing the encrypted data string in successive sets of a second selected number of bits; and

computer readable code for performing an XOR function between the encryption key and each successive set of the encrypted data string.

43. (New) The computer usable medium of claim 41, wherein the computer readable code for encrypting the encrypted data comprises:

computer readable code for determining an order in which 2^n different configurations of n bits are to be identified in a position code for the encrypted data string;

computer readable code for generating a control code associated with the determined order for the encrypted data string;

computer readable code for generating a position code associated with the determined order for the encrypted data string; and

computer readable code for combining the newly generated position code and the newly generated control code to create an encrypted version of the encrypted data string.

44. (New) The computer usable medium of claim 25, wherein the computer readable code for selecting a predetermined order comprises computer readable code for selecting a default order.

45. (New) The computer usable medium of claim 32, wherein the computer readable code for determining an order based on the frequencies of the 2^n combinations of the n bits of the input data string comprises computer readable code for determining an order based on the relative frequencies of the 2^n combinations of the n bits of the input data string.

46. (New) The computer usable medium of claim 32, wherein the computer readable code for determining an order based on the frequencies of the 2^n combinations of the n bits of the input data string comprises computer readable code for determining a pre-determined order based on the frequencies of the 2^n combinations of the n bits of the input data string.

47. (New) The method of claim 1, wherein determining an order further comprises determining an order in which 2^n different configurations of n bits are to be identified in a position code based on an analysis of the input data string.

48. (New) The method of claim 1, wherein determining an order comprises generating an order via a random number generator.

49. (New) The method of claim 1, wherein determining an order comprises generating an order using a mathematical formula.

50. (New) The method of claim 5 , wherein determining an order further comprises determining a first order associated with a first block of data and determining a second order associated with a second block of data wherein the first order is different than the second order.

51. (New) The method of claim 1, further comprising determining whether the input data string can be compressed simultaneously as it is encrypted.

52. (New) The method of claim 1, further comprising:

dividing the input string into successive n bit sequences;

comparing each of the 2^n different configurations of n bits with each of the successive n bit sequences;

determining the frequency of each of the 2^n different configurations appearing in the input data string;

determining whether a specific relationship exists between values of the frequencies of each of the individual 2n different configurations appearing in the input date string.;

selecting a first position code routine associated with the determined order when the specific relationship exists, the first position code being operable to encrypt and compress the input data string; and

selecting a second position code routine associated with the determined order when the specific relationship does not exist, the second position code being operable to encrypt the input data string without any compression.

53. (New) The method of claim 1, further comprising assigning a value of two to n.

54. (New) The method of claim 53, further comprising:

dividing the input data string into successive n bit sequences;

comparing each of the 2^n different configuration of n bits with each of the successive n bit sequences of the input string;

determining a first number representative of the number of times the most frequently occurring 2^n configuration appears in the input string;

determining a second number representative of the number of times the second most frequently occurring 2^n configuration appears in the input string;

determining a third number representative of the number of times the third most frequently occurring 2^n configuration appears in the input string

determining a fourth number representative of the number of times the fourth most frequently occurring 2^n configuration appears in the input string;

selecting a first position code routine associated with the determined order when the first number is greater than the sum of the third number and the fourth number, the first position code routine being operable to encrypt and compress the input data string; and

selecting a second position code routine associated with the determined order when the first number is not greater than the sum of the third number and the fourth number, the second position code routine being operable to encrypt the input data string without any compression.

55. (New) The method of claim 54, wherein generating a control code associated with the determined order, further comprises:

generating a first control code associated with the determined order when the first position code routine is selected; and

generating a second control code associated with the determined order when the second position code routine is selected wherein the first control code is different than the second control code.

56. (New) The method of claim 1, further comprising encrypting the encrypted data string.

57. (New) The method of claim 56, wherein encrypting the encrypted data string comprises:

providing an encryption key having a first selected number of bits;

dividing the encrypted data string in successive sets of a second selected number of bits; and

performing an XOR function between the encryption key and each successive set of the encrypted data string.

58. (New) The method of claim 56, wherein encrypting the encrypted data comprises:

determining an order in which 2^n different configurations of n bits are to be identified in a position code for the encrypted data string;

generating a control code associated with the determined order for the encrypted data string;

generating a position code associated with the determined order for the encrypted data string; and

combining the newly generated position code and the newly generated control code to create an encrypted version of the encrypted data string.

59. (New) The method of claim 3, wherein selecting a predetermined order comprises selecting a default order.

60. (New) The method of claim 10, wherein determining an order based on the frequencies of the 2^n combinations of the n bits of the input data string comprises determining an order based on the relative frequencies of the 2^n combinations of the n bits of the input data string.

61. (New) The method of claim 10, wherein determining an order based on the frequencies of the 2^n combinations of the n bits of the input data string comprises determining a pre-determined order based on the frequencies of the 2^n combinations of the n bits of the input data string.